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| 10/758,857      | 01/16/2004  | Karsten Meyer-Grafe  | 2133.015USU         | 6567             |

7590 03/07/2007  
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| EXAMINER |
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CONTINO, PAUL F

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| ART UNIT | PAPER NUMBER |
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2114

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/758,857             |  | MEYER-GRAFE ET AL.  |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Paul Contino           |  | 2114                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION: Final Rejection**

*Response to Arguments*

1. Applicant's arguments filed January 10, 2007, with respect to Rumpler et al. (DE19920299 – English translation taken from U.S. Patent No. 6,711,713) have been fully considered but they are not persuasive.

The Examiner respectfully disagrees with the Applicant's arguments on pages 6-8 regarding the rejection of claims 1-14 and 16-20 under 35 USC 102(b) over Rumpler et al. After considering the Applicant's arguments, the Examiner would like to clarify the prior art teaching of Rumpler et al.

Figures 1 of Rumpler et al. illustrates a transmitter containing two channels K1 and K2 being converted via S to a single channel F transmitted by FM1. The receiver of Figure 1 processes that single signal F received by FM2 via E into again two channels K1 and K2. Figure 4 shows two elements HW1 and HW2 with respective signals K1 and K2. These signals are sent to PS and converted to a single signal and sent via FM1 on the transmitter side. The receiver accepts the single signal via FM2 and sends the single signal to be process serially by P2 onto P1 (if necessary). The corresponding passages recited within Rumpler et al. include column 2 lines 15-35, column 3 lines 2-6, column 5 lines 11-12 and 33-50, column 6 lines 6-23 and 55-58, and claims 2 and 11. When the illustrations depicted in Figures 1 and 4, including the composition

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of the data packets of Figures 2 and 3, are referenced in light of the disclosure of the Specification, Rumpler et al. teaches those elements in claims 1 and 11 argued by the Applicant.

With regards to the description in column 2 lines 15-35, the physical detection of at least two channels on the transmitter end refer to signals K1 and K2. The logical transmission by at least two channels, which are stated further in Rumpler et al., as being logical channels, or links, are not communication channels/links. These logical channels/links are the information embodied in the single data packet as depicted in Figures 2 and 3. The two separate physical channels K1 and K2 are combined into a single data packet transmitted over a single physical channel – the single data packet containing the information of the physical channels K1 and K2, as logical links/channels (see Figure 4 transmitter). The single data packet containing the logical information for channels K1 and K2 are received at the receiver and transmitted first to a channel processor P2 which checks for the channel information for K2, and then the remaining received data is sent to P1 for data related to channel K1 (see Figure 4 receiver).

When read in context with the entirety of Rumpler et al., the description of combining two signals K1/HW1 and K2/HW2 into a single data packet for transmission over a single channel F cannot be interpreted any differently. Column 6 lines 6-11 and 20-22 clearly teach this. Column 6 lines 12-18 teaches that upon reception of the data packet, the packet is sent to P2 in order to extract data associated with channel K2, and then serially (see Figure 4) the packet is sent further on to P1 in order to extract data associated with channel K1. The data for the physical channels is stored as logical channel/link data in the single data packet. Further evidence of a single data signal being split into multiple signals on the receiver end is taught in column 5 lines 15.

The Examiner again would like to emphasize that the discussed "logical links/channels" as taught by Rumpler et al. refer to data stored in a single data packet, and not physical links or channels themselves (Figures 2 and 3; column 6 lines 19-24 and 55-58).

2. Applicant's arguments filed January 10, 2007, with respect to George have been fully considered but they are not persuasive.

The Examiner respectfully disagrees with the Applicant's arguments on pages 8-10 regarding the rejection of claims 1, 2, 11, and 15 under 35 USC 102(b) over George (U.S. Patent No. 4,652,776).

The signals outputted by processors 20, 21, and 22 are not the signals being detected on multiple channels and converted to a single signal for transmission on a single channel. These signals are the controls for the signals being detected and converted. The redundantly detected signals are 46a and 46b input into modules 30 and 32 (see Figure 2), where the multiple signals wound at 7 and 9 are converted via an AND gate into a single signal at output winding 8 for processing over a load (see Figure 1). George teaches this more explicitly in column 3 lines 7-27 and 34-44, and column 4 lines 1-5, 9-11, 33-39, and 56-61.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rumpler et al. (DE19920299 – English translation taken from U.S. Patent No. 6,711,713).

As in claim 1, Rumpler et al. discloses a method for transmission of safe process information, comprising:

detecting two or more process signals redundantly (*Fig. 1; column 5 line 33 through column 6 line 11*);

identifying an event that is relevant to system safety (*column 5 lines 33-50*); and

converting said process signals to a single process signal for further system-based processing (*column 6 lines 6-11 and lines 20-22*).

As in claim 2, Rumpler et al. discloses said redundantly detected process signals are detected in said conversion process via two or more channels, and wherein said single process signal is transmitted via one channel (*column 6 lines 20-22*).

As in claim 3, Rumpler et al. discloses said detection process is in digital or analog form (*column 5 lines 33-62, where the high/low and CRC indicate digital form*).

As in claim 4, Rumpler et al. discloses said conversion process is carried out to form a digital process signal (*column 5 lines 23-24 and column 6 lines 6-22*).

As in claim 5, Rumpler et al. discloses transmitting a 1-bit data item as the useful content of said single process signal (*column 5 lines 40-48 and column 6 lines 19-31, where the contact binary data is interpreted as a single useful bit (high/low) and stored in the DATA register for transmission via the single process signal – there is a 1-bit data item for each button*).

As in claim 6, Rumpler et al. discloses said transmission of said single process signal is protected (*column 5 line 60 through column 6 line 22 and column 10 line 53, where the CRC is interpreted as signal protection*).

As in claim 7, Rumpler et al. discloses said single process signal has useful content, and wherein at least one check bit is attached to said useful content in response to said conversion process (*column 5 lines 55-64 and column 6 lines 49-53, where a CRC addition inherently includes at least one check bit*).

As in claim 8, Rumpler et al. discloses using a CRC method to produce said at least one check bit (*column 5 lines 55-64 and column 6 lines 49-53*).

As in claim 9, Rumpler et al. discloses said conversion process is carried out at a point in a process signal transmission path capable of being predetermined (*Fig. 4; column 6 lines 6-22*).

As in claim 10, Rumpler et al. discloses said single process signal is converted to two or more additional process signals that are carried via separate channels in a system output component that is capable of being predetermined (*Fig. 1; column 6 lines 54-66*).

As in claim 11, Rumpler et al. discloses an apparatus for safe transmission of process signals, comprising:

a plurality of process signals being supplied on two or more channels and detected redundantly for system safety (*Fig. 1; column 5 line 33 through column 6 line 11*); and

a converter for conversion of [said] process signals to a single process signal, said single process signal being capable of being transmitted via one channel (*column 6 lines 6-11 and lines 20-22*).

As in claim 12, Rumpler et al. discloses means for system-based further processing of said single process signal (*column 6 lines 12-18*).

As in claim 13, Rumpler et al. discloses said converter has associated with it an input component, an output component, an intelligent unit, and a mechatronic unit (*Fig. 4; column 5*).

As in claim 14, Rumpler et al. discloses said converter is capable of producing a 1-bit data item (*Fig. 4; column 5 lines 44-48, where the entirety of Figure 4 is interpreted as a converter; where the high/low button binary data is interpreted as a single bit data item*).



As in claim 16, Rumpler et al. discloses said converter has means for protection of said single process signal (*column 5 line 60 through column 6 line 22 and column 10 line 53, where the CRC is interpreted as signal protection*).

As in claim 17, Rumpler et al. discloses said converter has, for protection purposes, means for generation of at least one check bit and for attachment of said at least one check bit to a signal content of said single process signal (*Fig. 2; (column 5 lines 55-64 and column 6 lines 49-53, where a CRC addition inherently includes at least one check bit)*).

As in claim 18, Rumpler et al. discloses said converter is designed for application of a CRC method (*column 5 lines 55-64 and column 6 lines 49-53*).

As in claim 19, Rumpler et al. discloses said converter comprises hardware and/or software elements (*column 2 lines 35-44*).

As in claim 20, Rumpler et al. discloses at least one network for an automation system (*Figs. 1 and 4; column 5 lines 18-19*).

\* \* \*

4. Claims 1, 2, 11, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by George (U.S. Patent No. 4,652,776).

As in claim 1, George discloses a method for transmission of safe process information, comprising:

detecting two or more process signals redundantly (*Fig. 2; column 2 lines 52-55, column 3 lines 25-36*);

identifying an event that is relevant to system safety (*column 2 lines 50-51 and column 5 lines 66-68*); and

converting said process signals to a single process signal for further system-based processing (*column 3 lines 7-16, 25-27, and 45-50*).

As in claim 2, George discloses said redundantly detected process signals are detected in said conversion process via two or more channels, and wherein said single process signal is transmitted via one channel (*Fig. 1; column 2 lines 30-34 and column 3 lines 31-36*).

As in claim 11, George discloses an apparatus for safe transmission of process signals, comprising:

a plurality of process signals being supplied on two or more channels and detected redundantly for system safety (*Fig. 2; column 2 lines 52-55, column 3 lines 25-36*); and

a converter for conversion of process signals to a single process signal, said single process signal being capable of being transmitted via one channel (*column 3 lines 7-16, 25-27, and 45-50*).

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As in claim 15, George discloses said converter comprises a logic AND gate (*Figs. 1 and 2; column 1 lines 43-44*).

### *Conclusion*

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Contino whose telephone number is (571) 272-3657. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PFC  
3/2/2007



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